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RN-6829

B. E. - III (Sem. V) (IC) Examination

May / June – 2010

Microprocessor Programming & Interfacing - II

Time : **3** Hours] [Total Marks : **100**

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ B. E. 3 (Sem. 5) (IC)

Name of the Subject :

☛ Microprocessor Programming & Interfacing - 2

☛ Subject Code No. : 6 8 2 9 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

SECTION - I

1 (a) (i) What is the content of the program counter after fetching 8 bit/16 bit data from a memory location 3065H? The instruction to fetch the data resides at 5123H. **10**

(ii) Discuss ALE, HOLD, SID, READY.

(iii) What is stack and stack pointer?

(iv) Which IC is used to prioritize if more than one interrupts occur? How many iunterrupts can be serviced using one of those ICs?

(v) Which interrupt has highest priority in 8085? Which of the interrupts are non maskable interrupts?

(b) Differentiate between memory-mapped and peripheral input-output interface. **5**

(c) Draw the flag register of 8085. Draw the schematic to latch the lower order address bus. **5**

2 (a) Design a seven segment LED output port with device address F5H, using a 3-to-8 decoder, NAND and NOR gates, common-anode seven segment LED. Draw control signals. 8

(b) What is DMA? Using a block diagram, explain how data are transferred using DMA controller? 8

OR

(a) Calculate the time delay produced by the following instructions: 8

```
        MVI B, 38 H     7T
LOOP 2 : MVI C, FFH     7T
LOOP 1 : DCR C          4T
         JNZ LOOP1      10/7 T
         DCR B          4T
         JNZ LOOP2      10/7T
```

(b) What are the various software interrupts in 8085? Give their locations and explain its usefulness. What are the different hardware interrupts in 8085? Give their vector locations. 8

3 Attempt any **two** :

(a) Write a program to convert a BCD number stored at location C200H into its HEX equivalent. Write down algorithm and explain it clearly. 7

(b) Draw the timing diagram of 8085 INTERRUPT ACKNOWLEDGE machine cycle and execution of RST. 7

(c) Draw the internal architecture block diagram of 8085. 7

SECTION - II

4 (a) (i) Explain the flags of 8085 microprocessor. 2

(ii) Explain the meaning of following instructions : 2

(a) STAX

(b) CPI

(iii) What is the difference between ADI 01H and INR instruction? **2**

(iv) State the logical instructions. **2**

(v) What is the difference between PC and SP? **2**

(b) Explain data transfer instructions related to memory. **8**

5 (a) Explain the difference between PUSH-POP and CALL-RETURN instructions with example. **8**

(b) Explain the priority modes and other features of 8259. **8**

OR

(a) Explain the block diagram of 8255A chip. **8**

(b) Explain the arithmetic instructions related to memory with an example. **8**

6 (a) Explain branch instructions. **8**

(b) A set of eight readings is stored in memory starting at location 2050H. Write a program to find the highest reading in the set and display the reading on output port 0. **8**

D2050H : 48H

D2051H : 32H

D2052H : F2H

D2053H : 38H

D2054H : 8AH

OR

(b) Write a program to arrange the given data stored at location 8000 H in reverse order : **8**

8000H : 0AH

8001H : 02H

8002H : 03H

8003H : 0BH

8004H : O4H